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Highlights

Contemporary Market Scenario

Benchmarking for Indian Airlines

Discovering Thoughts, Inventing Future

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Contents of the Issue

i. Copyright Notice
ii. Editorial Board Members
iii. Chief Author and Dean
iv. Contents of the Issue

1. Benchmarking for Indian Airlines Industry in Contemporary Market Scenario. *1-11*
2. Determinants of Service Quality Factors towards the Public Specialized Banks of Bangladesh. *13-20*
3. Employees Empowerment and their Performance in Private Sector: An Analytical Study. *21-27*

v. Fellows
vi. Auxiliary Memberships
vii. Process of Submission of Research Paper
viii. Preferred Author Guidelines
ix. Index

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Benchmarking for Indian Airlines Industry in Contemporary Market Scenario

By N. Thamarai Selvan, B. Senthil Arasu & S. Thanigai Arul

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Abstract- *Purpose:* The purpose of the study is to analyse the performance of Indian air transport operators using key parameters and to benchmark production, marketing and overall efficiencies that can eventually guide top management in tackling present contemporary challenges prevailing in the Indian aviation market and also to provide insights in strategic decision making process.

Design/Methodology/Approach: This study applies two stage Data Envelopment Analysis (DEA) to evaluate the production and marketing and overall efficiency. Super-Efficient DEA model is used to calculate the efficiency scores and to rank the airlines. Eight Key performance indicators of production and marketing efficiencies are analysed from the year 2010 to 2014 to study the market dynamics.

Keywords: *benchmarking, two stage DEA, super efficiency model, indian airlines industry.*

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Benchmarking for Indian Airlines Industry in Contemporary Market Scenario

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Findings: The study proves that DEA can be used as is an effective tool in analyzing the production, marketing and overall efficiency airlines operating in India. Two significant results of this study are that Low Cost Carrier (LCC) is a bench mark airline for production and overall efficiency parameters in Indian airlines industry and that the production efficiency has higher impact on overall efficiency than marketing efficiency.

Research limitations/implications: These findings will help strategic decision makers of Indian airline companies to focus on improving production performance and also to emulate Low Cost Carrier models. The analysis carried out using five years data up to the year 2014 in domestic market will be of help to stake holders in the Indian aviation industry.

Keywords: benchmarking, two stage DEA, super efficiency model, indian airlines industry.

I. Introduction

India is one of the fastest growing aviation markets and currently the ninth largest civil aviation market in the world and is projected to be the third largest aviation market by 2020. Total passenger traffic stood at 190 Million during Financial Year (FY) 2015(Airport Authority of India –Passenger statistics-2015).Growth in passenger traffic has been strong since the new millennium, especially with rising individual incomes and low-cost aviation. Passenger traffic expanded at a Compounded Annual Growth Rate (CAGR)of 10% since 2009. The international and domestic passengers carried in last six years, along with growth rate from 2009-2015 is shown in figure 1.

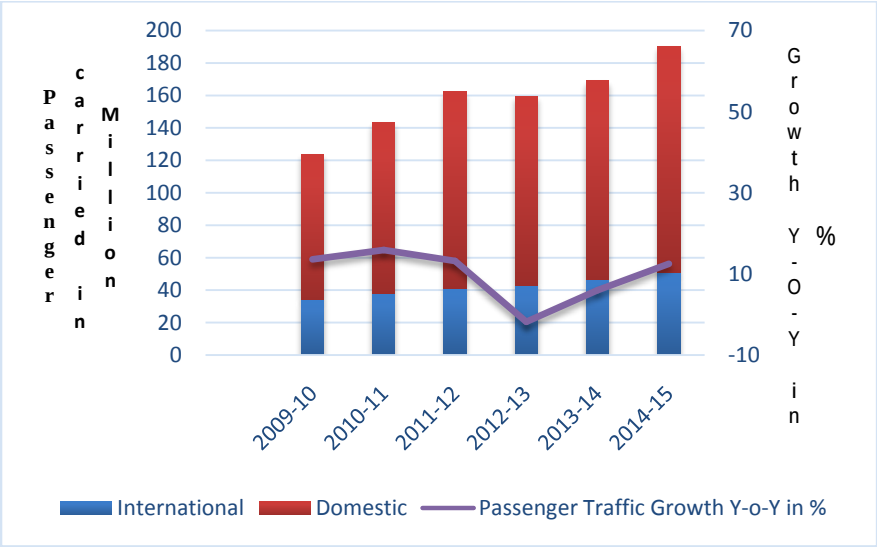

Figure 1: Passenger Carried (Millions) and Growth

Source: Airport Authority of India –passenger statistics -2009-15

Eighty five International airlines fly in the Indian sky, connecting over 40 countries. Although India's middle-income population is expected to increase from 160 Million in 2011 to 267 Million by the year 2016, the Indian air transport sector is one of the least penetrated air markets in the world with just 0.04 trips per capita per annum as compared to 0.3 in China and more than 2 in

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the USA. As there is good potential for growth, Indian carriers plan to increase their fleet size to reach 800 aircrafts by 2020.The Indian aviation sector is likely to see investments totaling USD 12.1 Billion during 2012-17 of which USD 9.3 Billion is expected to come from the private sector(Government of India's Make in India portal).

II. Indianair Transport Industry (IATI) - an Overview

Presently eight airlines are operating in India of which, five airlines account for 97% of the market share. New startups Air cosata, Air Asia-India and Vistara are yet to make a noticeable impact in the market. Indigo, the market leader, Spice jet, and Go Air are Low Cost Carriers (LCC) and Air India (Owned by Government of India) and Jet Airways are Full Service Carriers(FSC). The market share as on August 2016 is represented in the following Figure 2.

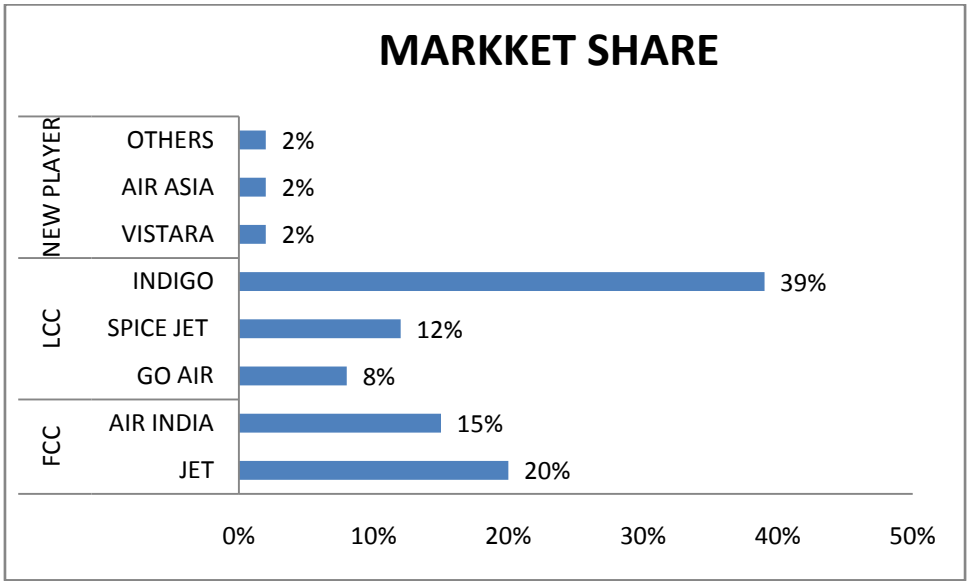

Figure 2: Market share as on August 2016

Source: Director General of Civil Aviation (DGCA), India

While India's LCCs have a domestic market share of 59%, passengers flying on full service airlines pay close to LCC fares in economy class. As a result India is virtually a 100% low fare market. In the Indian market LCCs and FSCs both operate from the same airports with new aircraft, offering high frequencies on key markets. LCC reliability, on time performance, consistency, ground product and cabin crew service standards, are comparable with or even better than FSCs. As per center for Asia pacific aviation (CAPA) report on Indian aviation states that from the Indian passenger's perspective there is little to distinguish between an LCC and an FSC in economy class other than the fact that the latter offers a complimentary onboard meal.

a) Strategic issues in IATI

Despite the phenomenal growth of the Indian aviation market and a very positive forecast for the future, Indian Air transport operators continue to struggle to stay afloat and make profits mainly due to low fares, drop in premium travels, low yields and tax burdens on fuel,. Many international airlines from other countries have started making profits after drop in oil price but in India the FSCs have been consistently making losses for last four years on the other hand, the LCCs, Indigo and Go Air are earning profits. Expected profit/ Loss for Indian airlines for FY 2015 are shown in Table 1.It's alarming to note that the total debt of Indian Airlines industry stands around $11.3 billion and 8 airlines have become defunct in last 10 years.

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Table 1: Net Profit/Loss of Indian Carriers – (FY- 2014-2015)

Airline	Net Profit/(Loss) In $ -Million
Indigo	150-175
Go Air	14-15
Spice Jet	(-107)
Jet Airways	(-343)
Air India	(-900to –920)
New Airlines: Air Asia India, Air CoastaandVistara	(-50to -60)

Source: Center for Aviation – India (CAPA) Market study-2015

To avoid mounting losses and to continue to grow in the field the top management of IATI requires a clear vision that can be translated into adaptable strategies and managerial decisions to turn the airlines around. A comprehensive study including vital performance indicators as major input and output parameters have not yet been carried out for IATI. It is felt that Bench marking of Airlines must be carried out using performance indicators to achieve this objective. So far, the analyses carried out in India are primarily based on one of the many key performance indicators such as revenue earned, total number of passenger carried, passenger load factor, profit generated etc.

It is conceived that Data Envelopment Analysis (DEA) can be used to analyse the performance of IATI using the performance indicators. This study uses a two-stage DEA model to overcome shortcomings of the traditional one-stage DEA. Of the many key performance indicators used in studies reported in literature, the input and intermittent output variables for this study are selected after extensive discussions with Indian aviation experts and also with top management executives of IATI. The production, marketing and overall efficiency ranking are obtained using a super-efficient DEA model. The findings from the analysis are discussed. This article concludes with managerial implications, limitations of the study and future scope for academic research.

III. Literature Review

Data Envelopment Analysis (DEA) is a linear programming based technique that converts multiple output and input measures into a single comprehensive measure of performance. This is performed by the construction of an empirical-based production or resource conversion frontier, and by the identification of peer groups. DEA has also been widely applied in evaluating airline performance.

Schefczyk et al. (1993) used the DEA technique to analyze and compare operational performance of 15 international airlines using non-financial data such as available ton kilometer, revenue passenger kilometer etc. The study demonstrated that DEA can be a very effective tool to assess the technical efficiency of international airlines compared to financial analysis. Sickles et al. (1995) examined the performance of the eight largest European and the eight largest American airlines for a ten year period between 1976-1986 using two methods –parametric analysis using statistical estimation and non-parametric analysis (DEA) using linear programming. The authors observed discrepancy in the productive efficiency of European airlines even under the conditions of deregulations and liberalization of the airline industry. Michaelides et al. (2009) have employed both Stochastic Frontier Analysis (SFA) and DEA using a panel data set of 24 world's largest network airlines to estimate technical efficiency in International Air Transport for the period 1991-2000. The authors observed that the airlines achieved constant returns to scale with technical efficiencies ranging from 51% to 97%. They also observed that ownership (private or public) did not affect the technical efficiency of the airlines and the results from both SFA and DEA did not vary significantly. GeorgeAssafet.A.et al. (2009) measured the operating efficiency of UK airlines in the years 2002-2007. The study measured the technical efficiency of airlines through data envelopment analysis bootstrap methodology. The efficiency of UK airlines was found to continuously decline since 2004 to reach a value of 73.39 per cent in 2007. Factors that were found to be significantly and positively related to technical efficiency variations included airline size and load factor. Boon L. Lee et al. (2010) determined the Relative Efficiency of International, Domestic, and Budget Airlines. This study determined whether the inclusion of low-cost airlines in a dataset of international and domestic airlines has an impact on the efficiency scores of 'prestigious' and purportedly 'efficient' airlines. The findings reveal that the majority of budget airlines are efficient relative to their more prestigious counterparts. Moreover, most airlines identified as inefficient are so largely because of improper utilization of non-flight assets. Domenico Campisi et al. (2010) analyzed the relationship between low cost carriers (LCC) passenger traffic, secondary airports utilization and regional economic development in Italy. LCCs have been the fastest growing sector of the aviation industry. The

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routes served by these carriers were undersized in comparison with principal routes. The findings indicated that increased service at Italian secondary airports could affect economic development in the surrounding regions, including increased tourism and the potential for cluster development. Wen-Min Lu et al. (2011)analyzed the effects of corporate governance on airline performance (Production and marketing efficiency). The study applied two-stage Data Envelopment Analysis (DEA) truncated regression to find out if the characteristics of corporate governance affect airline performance. The results demonstrate that corporate governance influences firm performance significantly. Seong-Jong Joo and Karen L. Fowler (2012) studied comparative efficiency and determinants of efficiency for major world airlines found that revenues and expenses were significant in explaining the efficiency score of airlines.

Atul Raiet. al. (2013) determined the technical efficiency of US airlines during 1985-1995 using the DEA model. Results of efficiency analysis were applied to determine if efficiency and stock returns were related. Two portfolios, one consisting of efficient airlines, and the other consisting inefficient airlines, were compared. The efficient portfolio was found to outperform the inefficient portfolio by an annual margin of 23% using raw returns.

It can be seen that no bench marking tools including DEA have included Indian Airlines in their study and a literature survey shows that there are, hitherto, no articles reporting analysis of IATI. The input/output variables used in earlier DEA analyses of the airline industry and their key findings are given in Table2.

Table 2: Parameters studied and Findings

Year and name	Parameters		Findings
	Inputs	Outputs	
Schefczyk M (1993)	Available Ton-Kilometres (ATK), operating costs, and non-flight assets (NFA)	Passenger Revenue, Non passenger revenue(NPR)	DEA can be very useful tool to assess the technical efficiency of international airlines which otherwise was difficult to do using financial data
MICHAELIDES(2009)	employee, fuel and oil, fleet	total annual passenger-kilometers	Airlines achieved constant returns to scale with technical efficiencies ranging from 51% to 97%. ownership (private or public) does not affect the technical efficiency of the airlines
A. George Assafet al (2009).	labour expenses, aircraft fuel and oil expenses, aircraft value	Tone kilometers, available and total operational revenues	The technical efficiency of UK airlines has continuously declined since 2004 Airline size and load factor positively affect the efficiency.
Boon L. Lee (2010)	available ton-kilometers (ATK), operating costs, and non-flight assets (NFA)	revenue passenger-kilometers (RPK) and non-passenger revenue	Majority of budget airlines are efficient compare to their more prestigious counterparts. Most airlines identified as inefficient are mainly because of the overutilization of non-flight assets.
Domenico Campisi et al. (2010)	Accessibility and traffic growth.	Passenger traffic growth	LCCs have been the fastest growing sector of the aviation industry. Increased service level at Italian secondary airports could positively affect economic development in the surrounding regions.
Wen-Min Lu et al (2011).	FTE-Full time employees, Fuel, Seats, Flight Maintenance expenditure	RPK, NPR- Non passenger revenue	Two-stage Data Envelopment Analysis (DEA) is used corporate governance influences firm performance significantly.
Seong-Jong Joo and Karen L. Fowler (2012)	Expenses	Revenues, passengers, RPK, Seat factor	Efficiency of the airlines in Europe is the lowest comparing with Asia and North America.

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Atul Rai (2013).	Number of planes, number of employees, and gallons of fuel consumed.	Revenue passenger miles, number of departures, number of passengers, and available ton-miles.	Airlines are grouped in to efficient and inefficient airlines The efficient portfolio outperforms the inefficient portfolio by an annual margin of 23% using raw returns

From the literature available, it can be inferred that DEA serves as an effective bench marking tool and multiple important parameters used as input and output variables can be extended to the Indian context as well. As most of the earlier studies have been carried out using older data sets, the findings probably may not be appropriate for present managerial decisions. This paper aims at analyzing the IATI using DEA model with vital parameters as variables. Five year data from FY 2009-2014 are collected for analysis so that the findings would not only give directions to guide in managerial decisions but also helps for future strategic planning.

IV. The Efficiency Analysis

Charnes, Cooper and Rhodes (CCR) model of DEA was firstused to study the performance of Indian Airlines. The choice of the CCR model is based on the evidence from prior literature that the airline industry shows a constant return to scale. Five airlines with 97% market share are taken as Decision Making Units (DMU) for analysis. CCR model analysis resulted in unity score for more than one DMU. It is also seen that five DMUs are not sufficient to analyse the performance using DEA model. Hence super efficient DEA model is used for analysis and to rank the airlines. With the super-efficiency model, a ranking among the DMUs are possible.

a) Two-stage model

Evaluating the organizations performance is a complex process that cannot take just one criterion or one dimension. Traditional DEA neglects the intermediate measure or linking activities (Fare and Whittaker, 1995; Chen and Zhu, 2004; Tone and Tsutsui, 2009). In this study two stage DEA model is applied. The overall efficiency score is calculated by combining production and marketing process. In the first stage, the production efficiency is calculated using three inputs namely fleet, employees and operating expenses, which produce two outputs which are taken available ton kilometers, and available seat kilometers. These two intermittent variables are taken as input variables for marketing efficiency calculations. The final out variables-parameters considered are revenue passenger kilometer, Total operating revenue and total cargo carried. The input, output, intermittent variables used in two stage DEA Model are shown in Figure 2.

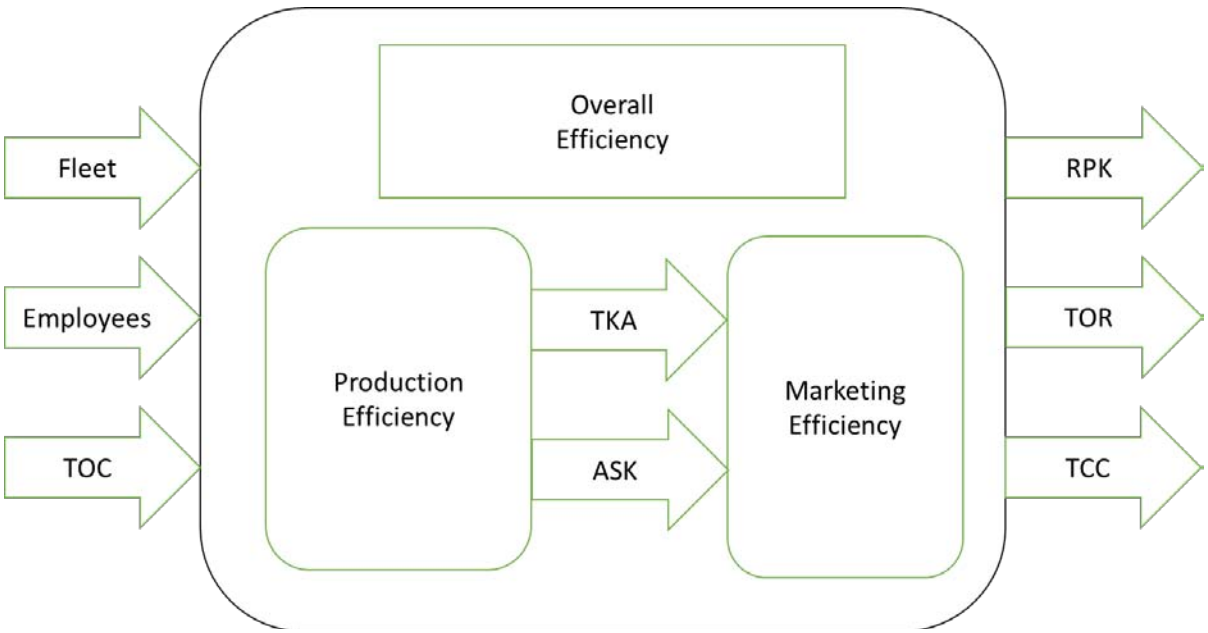

Figure 2: Two stage transformation model

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The key parameters considered for this study after detailed discussions with Aviation experts and top management of IATI with definitions are listed in Table3.

Table 3: List of Key Performance indicators analyzed

Variables	Unit /Measurement	Definition
Input		
Aircrafts (Fleet)	Numbers	Total number of aero planes operated by the airlines including leased flights.
Employees	Numbers	Total number of full time employees
Operating cost (TOC)	Million in INR (Indian rupee)	Total cost spent for operations of the all aircrafts
Intermediate		
Available tone kilometer (ATK):	Million	The number of tonnes of capacity available for the carriage of revenue load (passenger and cargo) multiplied by the distance flown.
Available seat KM's(ASK):	Million	Available seat kilometres (ASK). The number of seats available for sale to passenger multiplied by the distance flown
Output		
Revenue Passenger KM's (RPK):	Million	The number of revenue passengers carried multiplied by the distance
Total Operating Revenue (TOR)	Million in INR(Indian Rupee)	Revenues received from total airline operations including scheduled and non-scheduled service
Total Cargo Carried (TCC)	Tons	The freight plus mail carried by an aircraft.

b) Super-efficient DEA Analysis

In standard DEA, DMUs are identified as fully efficient and assigned an efficiency score of unity if they lie on the efficient frontier. Inefficient DMUs are assigned scores of less than unity. To illustrate, figure 3shows four DMUs producing a single output and consuming two inputs x1 = x2. Minimum input combinations lie on the frontier connecting A, B and C, i.e., no other DMU produces the same output with a lower input combination. Unit D is dominated by the other three DMUs and produces the same output although with a higher input combination. The inefficiency of unit D can be measured by its radial distance to the frontier along the ray extending from the origin to D and intersecting the AB segment of the frontier.

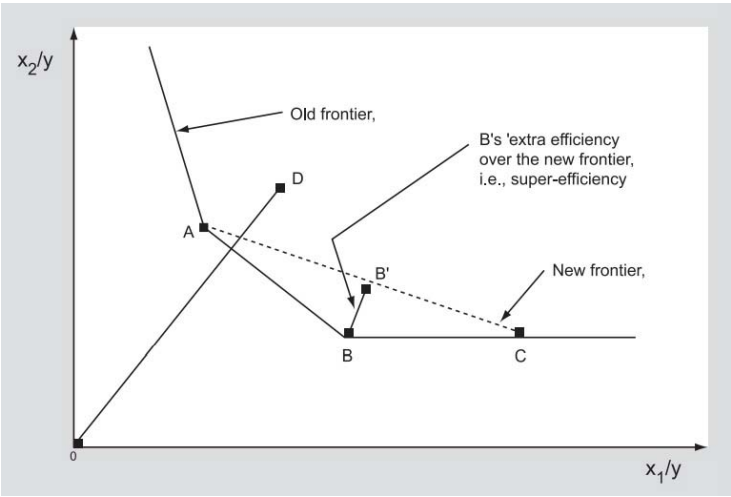

Figure 4: Standard and Super-efficient DEA Input-oriented Model

Source: Bruno Yawe (Zambia social science Journal 05-10-2010)

Further ranking of the efficient set of DMUs is possible by computing efficiency scores in excess of unity. Consider unit B in figure 4. If it were excluded from the frontier, a new frontier would be created comprising only units A and C. The super-efficient score for unit B is obtainable by calculating its distance to the new frontier whereby this 'extra' or 'additional' efficiency denotes the increment that is permissible in its inputs before it would

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become inefficient. The consequence of this modification is to allow the scores for efficient units to exceed unity. For instance, a score of 1.25 for unit B would imply that it could increase its inputs by 25 percent and still remain efficient. This super-efficient model (Andersen and Petersen, 1993) is applied in this analysis using the approach described in Zhu (2004).

V. Data Analysis and Findings

After selecting the parameters to get the best results from the study, the required data on TKA, ASK, RPK and TCC are collected for five years from DGCA yearly aircraft statistics published. Further, annual reports and balance sheets of these airlines are also referred to collect data on the number of employees, fleet, TOC& TOR. The analysis is carried out on five Indian airline companies operating in the domestic sector in the years 2009-10 to 2013-14 which account for 97% Indian domestic market. The airline companies include Air India, Jet airways, -FSC, Spice jet, Go air and Indigo-LCC. Each airline company is treated as one DMU in DEA analysis. Descriptive statistics for the airline sample taken for the year 2009 – 10 is shown in Table 4.

Table 4: Descriptive statistics for the year 2009-10.

Fleet	Employee	TOC	RPK	TOR	TCC
Min. : 8.0	Min. : 1216	Min. : 9088	Min. : 2398	Min. : 8961	Min. : 0
Median : 25.0	Median : 2691	Median : 21548	Median : 7268	Median : 26015	Median : 50296
Mean : 62.6	Mean :10064	Mean : 72006	Mean : 6920	Mean : 51308	Mean : 52302
Max.:147.0	Max. :31444	Max. :190318	Max. :10792	Max. :120485	Max. :101468

The minimum values represent the Go air (LCC) and the maximum values are for Air India (FSC).

Correlation coefficients for inputs and outputs for the overall efficiency for the year 2009-10 are presented in Table 5.

Table 5: Correlation coefficients matrix

	Fleet	Employee	TOC	RPK	TOR	TCC
Fleet	1					
Employee	0.933909	1				
TOC	0.989943	0.97447	1			
RPK	0.611132	0.355764	0.51357	1		
TOR	0.873607	0.642135	0.797479	0.819656	1	
TCC	0.939756	0.851864	0.913292	0.767698	0.848707	1

The results of the correlation coefficient matrix show a significantly positive relationship between inputs and outputs. The data set satisfies the assumption of isotonicity wherein, increasing the value of any input while keeping other factors constant should not decrease any output but should instead lead to an increase in the value of at least one output.

The production efficiency scores obtained using super efficient DEA with input and output variables taken for study are shown in Figure 5.

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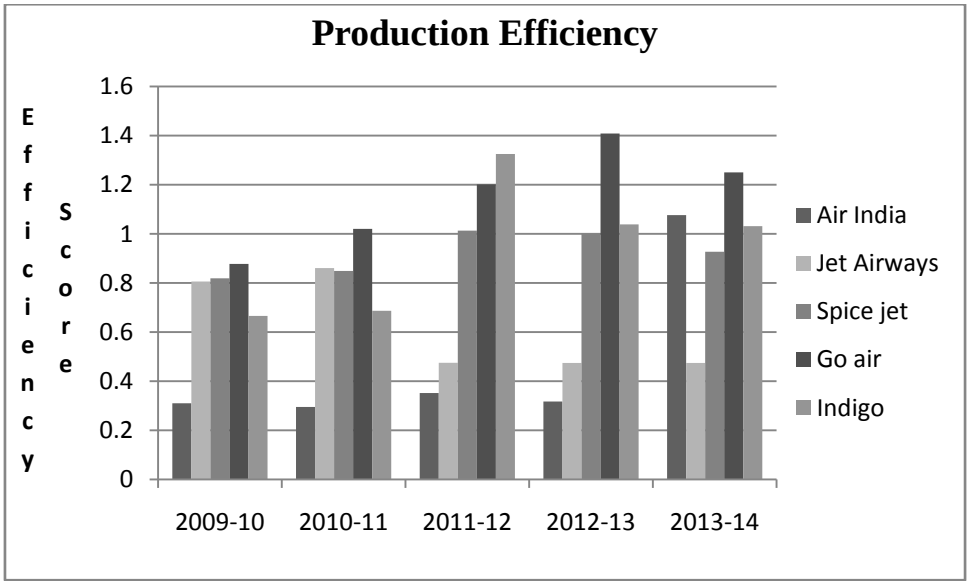

Figure 5: Comparison of Production Efficiency Scores

Table 6: Ranking of airlines by Production efficiency scores

	1	2	3	4	5
2009-10	Go air	Spice jet	Jet Airways	Indigo	Air India
2010-11	Go air	Jet Airways	Spice jet	Indigo	Air India
2011-12	Indigo	Go air	Spice jet	Jet Airways	Air India
2012-13	GO air	Indigo	Spice jet	Jet Airways	Air India
2013-14	GO air	Air India	Indigo	Spice jet	Jet Airways

LCC are seen to be very efficient, occupying the first position whereas FSCs are least efficient for all the five years. Indigo (LCC) occupied the fourth position in FY 2010- 11 had improved their performance in the following years. The finding is in line with higher aircraft utilization, more numbers of departures made by LCC (DGCA- Airlines performance data) than FSCs .This could be due to the reason that LCC's maintain similar type of aero planes, the maintenance of aircrafts, availability, and mandatory checks are optimized.

The marketing efficiency scores derived are reflected in Figure 6.

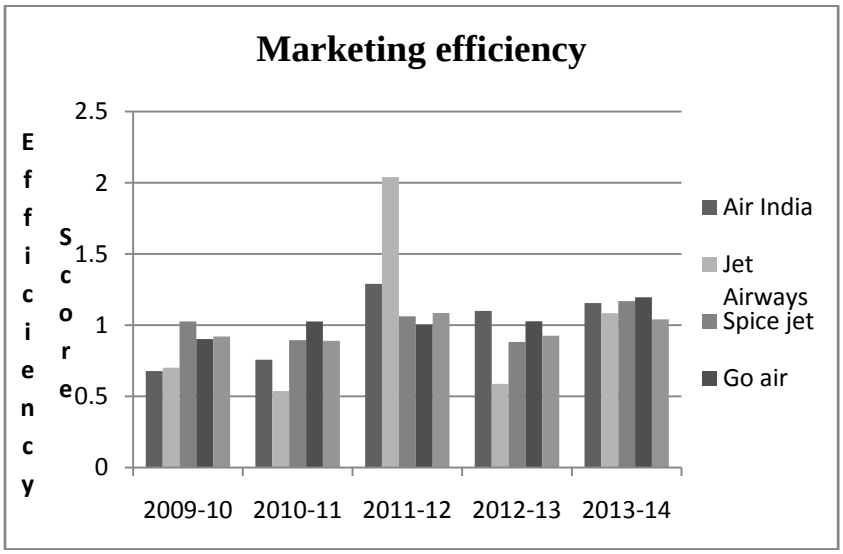

Figure 6: Comparison of Marketing Efficiency Scores

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Table 7: Ranking of airlines by marketing efficiency

	1	2	3	4	5
2009-10	Spice jet	Indigo	GO air	Jet airways	Air India
2010-11	Go air	Spice jet	Indigo	Air India	Jet airways
2011-12	Jet airways	Air India	Indigo	Spice jet	Go air
2012-13	Air India	Go air	Indigo	Spice jet	Jet airways
2013-14	GO air	Spice jet	Air India	Jet Airways	Indigo

There is no consistent occupier for the first and last ranking either from LCC or from FSC. It is also observed that IATI competes only on the price front by offering attractive fares. This could be due to the fact that Indian passengers are sensitive to price, which causes IATI to adopt predatory pricing strategy (center for monitoring Indian economy Pvt. Ltd- passenger forecast May 2015)

The overall efficiency scores obtained by the combination of all input and intermittent variables are shown in table 10.

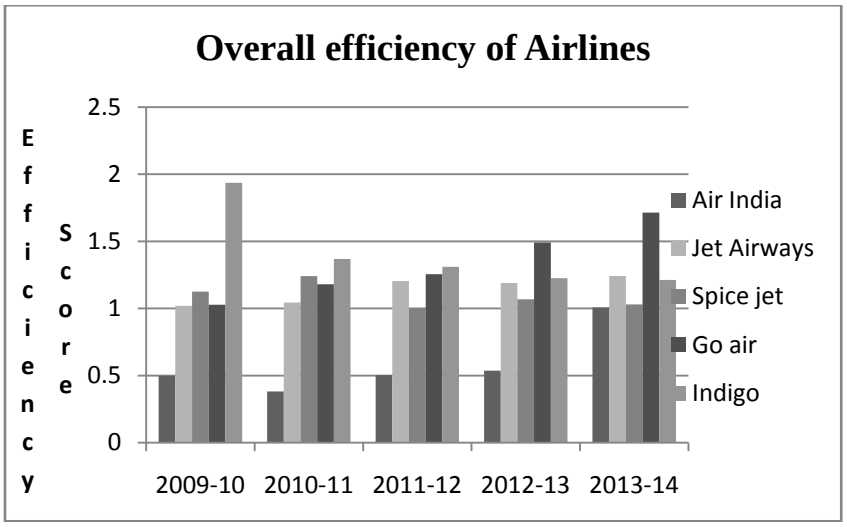

Figure 7: Comparison of Overall Efficiency Scores

Table 8: Ranking of Airlines by overall efficiency

	1	2	3	4	5
2009-10	Indigo	Spice jet	GO air	Jet airways	Air India
2010-11	Indigo	Spice jet	GO air	Jet airways	Air India
2011-12	Indigo	Go air	Jet airways	Spice jet	Air India
2012-13	GO air	Indigo	Jet airways	Spice jet	Air India
2013-14	GO air	Jet airways	Indigo	Spice jet	Air India

LCC are seen to be highly efficient and the Government-owned Airline Air India is least efficient consistently for five years. Spice jet –LCC is also found to be less efficient in the past three years, which is in line with losses observed by the airlines company. Similarly Go air has become profitable only in the past two years. Further analysis is carried out to find out the impact of production and marketing efficiency on overall efficiency. The correlation score is reproduced in the correlation matrix in table 9.

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Table 9: Correlation Matrix

	Production	Marketing	overall
Production	1		
Marketing	0.16	1	
overall	0.46	0.24	1

Both production and marketing efficiencies have positive impacts on overall efficiency whereas the increase in the production performance has a higher impact on the overall performance of the Indian airlines. Marketing efficiency has comparatively lower effect.

VI. Conclusion

This study has been performed using the latest data available and therefore, the results give valuable insights to airlines strategic decision makers to increase efficiency. Eight vital key performance indicators are taken as variables for analysis to produce reliable results. The practical implications from the study are

- Airlines in India must emulate the LCC model to be highly efficient.
- Available resources may be allotted to increase technical efficiency, which in turn produces more seats and capacity for sale.
- Marketing efficiency has less impact than production efficiency on overall efficiency of the Airlines. Indian Airline companies may try to adopt new innovative marketing strategies other than pricing to improve overall efficiency.
- FSCs must focus on improving their technical efficiency so that overall efficiency can be increased.

The results derived correlate well with the performance of the Indian air transport market in last five years. LCCs s are in a position to stay afloat but FSCs have been making heavy losses, which have gone as far as forcing Air India to go in for bailout package with Indian government and causing Jet Airways to sell their shares to foreign carrier Ethihad Airways. It is also observed that the no Indian airlines operator has hitherto implemented notable marketing initiatives that could change the market dynamics other than offering attractive fares.

The limitation of this study is that IATI is analysed, taking only the domestic market of Indian airlines, which account for 68% of passenger carried (for the FY2015). The performance of Indian Airlines has not been compared with foreign carries or other Asia pacific carriers. Future studies may be carried out by including international data and comparing with foreign carrier's data.

This study may lead to more analyses in the Indian aviation sector using proven tools, which will be helpful for all stake holders in the industry. Future studies could group Indian carriers into LCC, FSC and Government owned, to get better insights. Improvements in marketing efficiency may be attempted by carrying out gap analysis, important and performance analyses (Fang-Yuan et.al.) on Indian airlines sector. This work may also open up further academic research and analyses aimed at guiding the industry to optimize resources.

References Références Referencias

1. Andersen P and NC Petersen (1993).A Procedure for Ranking Efficient Units in Data Envelopment Analysis. *Management Science* 39(10): 1261-1264.
2. Atul Rai (2013). Measurement of efficiency in the airline industry using data envelopment analysis. *Investment Management and Financial Innovations*, Vol 10, Issue 1, 2013.
3. Airport authority of India (AAI), www.aai.aero.com (assessed on 1.05.2015).
4. Boon L. Lee and Andrew C. Worthington (2010).The Relative Efficiency of International, Domestic, and Budget Airlines: Nonparametric Evidence. Journal of Economic Literature -classifications: D24, L93.
5. Bruno Yawe (2010). Hospital Performance Evaluation in Uganda: A Super-Efficiency Data Envelope Analysis Model. *Zambia Social Science Journal*, Vol. 1, No 1.
6. Charnes, A., Cooper, W.W., Lewin, A.Y. and Seiford, L.M. (Eds) (1994), Data Envelopment Analysis: Theory, *Methodology and Applications*, Kluwer Academic Publishers, Boston, MA.
7. Chen, Y., Zhu, J., 2004. Measuring information technology's indirect impact on firm performance. *Information Technology and Management Journal* 5 (1–2), 9–22.
8. Centre for Aviation – India (CAPA), www. centreforaviation.com (assessed on 1.07.2015)
9. Center for monitoring Indian economy Pvt. Ltd., www.cmie.com (assessed on 1.07.2015)
10. Domenico Campisi, Roberta Costa, Paolo Mancuso (2010). The Effects of Low Cost Airlines Growth in Italy. *Modern Economy*, Vol.1, Pp59-67
11. Director General of Civil Aviation, (DGCA) Government of India, www.dgca.nic.in, statistics on airlines from 2009-14
12. Fang-Yuan Chen, Yu-Hern Chang (2005).Examining airline service quality from a process perspective. *Journal of Air Transport Management*. Vol.11 Pp. 79–87.

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13. Fare, R., Whittaker, G, (1995). An intermediate input model of dairy production using complex survey data. *Journal of Agricultural Economics* 46 (2), Pp201–213.
14. George Assaf. A and Alexander Josiassen (2009). The operational performance of UK airlines: 2002-2007. *Journal of Economic Studies*, Vol. 38 No. 1, 2011 Pp. 5-16.
15. Good DH, LH Roller and RC Sickles (1995). Airline Efficiency Differences between Europe and the United-States – Implications for the Pace of Ec Integration and Domestic Regulation. EJOR. EJOR 8: 508-518.
16. International Air Transport Association (IATA), www.iata.com (assessed on 1.05.2015).
17. Make in India, Government of India, www.makeinindia.com (assessed on 1.05.2015)
18. MICHAELIDES, P. G., BELEGRI-ROBOLI, A., KARLAFTIS, M., MARINOS (2009), T. International Air Transportation Carriers: Evidence from SFA and DEA Technical Efficiency Results (1991–2000). *European Journal of Transport and Infrastructure Research*, Vol.9 (4), pp. 347–362.
19. Schefczyk M (1993). Operational Performance of Airlines: An Extension of Traditional Measurement Paradigms. *Strategic Management Journal*.1: 301-317.
20. Seiford, L.M. and Thrall, R.M. (1990), "Recent developments in DEA: the mathematical programming approach to frontier analysis", *Journal of Econometrics*, Vol. 46 Nos 1/2, pp. 7-38.
21. Tone, K., Tsutsui, M., 2009. Network DEA: a slacks-based measure approach. *European Journal of Operational Research* 197 (1), 243–252.
22. Wen-Min Lu, Wei-Kang Wang, Shiu-Wan Hung, En-Tzu Lu (2012). The effects of corporate governance on airline performance: Production and marketing efficiency perspectives. *Transportation Research*, Elsevier, Part E 48 529–544.

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Determinants of Service Quality Factors towards the Public Specialized Banks of Bangladesh

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Abstract- To make customer concerned with services and making long term relationship for the sustainable business organization there no time to compromise the expectation of customer and making available for. This study is related with the determinants of service quality factors concentrated on the specialized banks of Bangladesh. The empirically descriptive study has been conducted over the 75 respondents those are the customer of three specialized banks of Bangladesh. A well stuffed questionnaire was set to collect the primary data with considering each bank 25 respondents, it has been analyzed with taking the help of different statistical tools and encoding the data with Statistical Package for Social Sciences –SPSS (v-21).After Disseminating data it presents for the reader to make well perceive.

Keywords: determinants, specialized banks, services, customer expectation, contented.

GJMBR-A Classification: JEL Code: E59



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Determinants of Service Quality Factors towards the Public Specialized Banks of Bangladesh

Md. Rasel Uddin [α], Akash Saha [σ], Md. Julfikar Ali [ρ] & Md. Jewel Rana [ω]

Abstract- To make the customer that concerned with services and making long term relationship for sustainable business organization there no time to compromise the expectation of customer and making available for. This study is related with the determinants of service quality factors concentrated on the specialized banks of Bangladesh. The empirically descriptive study has been conducted over the 75 respondents those are the customer of three specialized banks of Bangladesh. A well stuffed questionnaire was set to collect the primary data with considering each bank 25 respondents;it has beenanalyzed with taking the help of differentstatistical tools and encoding the data with Statistical Package for Social Sciences –SPSS (v-21).After Disseminating data it presents for the reader to make as for the well perceive. It has been revealed that explanatory variables are strongly associated to explain the service quality factors of Public Specialized Banks.The multiple regression analysis is a technique of multivariate analysis, adopted to determine the importance of the perceived service quality factors in this research. By regression, we can articulate that, if these factor changes then what will be the impact on overall customer satisfaction.The study finds that Reliability and Responsiveness are the most relative factors in determining the customer satisfaction ofpublic specialized banks followed by empathy, tangible and assurance. It also finds that these five factors or dimensions vary across gender, age, education level, and occupation. It is the recommending issues to make the better services of the customer that's why the specialized banks of Bangladesh requisite follow the adaption by the means of customer database system, modern and trendy basis services, sophistication genre of environment, integrating more professional efficiency to serve the more integration of the customers'oriented services of the baking sectorsin Bangladesh.

Keywords: determinants, specialized banks, services, customer expectation, contented.

I. Introduction

Amplified competition, highly erudite customers, and intensification in ordinary of living are obliging many businesses to assessment their customer service strategy. Commercial banks are concentrating more determinations to preserve prevailing customers somewhat than to attain new ones since the price tag of obtaining new client is superior than cost of absorbent standing customers. Make the most of customer satisfaction through quality customer service has been termed as 'the ultimate weapon' by Davidow and Vital (1989). The expectation that comes from service determination the factors of customers such as endorsements of services, particular needs and bygone understandings The anticipation of service and the apparent service result may not be equal, thus separation a gap. So for the determining the level of services there very much important to make a level of services that the customers expect, what are the available by the industry for. Specialized banks of Bangladesh are the banks they are trying to meet the customer satisfaction by providing the sophistication mode of services with taking the determinations of particular services of banking sector. They are giving the forces to bounce the best with integrating service environment. Customer satisfaction and service quality is interconnected with each other. Gratification of customer is contingent upon service quality and service quality is progressively offered as a strategy by marketers to make a place themselves more meritoriously in the financial market. Due to the arrival of e-banking, quality of service has been enhanced a lot as related to outdated banking services and for the trending situation at all everything is now on the level of challenging why not for the specialized banks of Bangladesh.

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II. Objectives of the Study

The objectives are the followings: -

- To identify the customers' attitude towards the present service quality of banks.
- To find the persuadingfactors of services.
- To evaluatethe performance of government specialized bank on the basis of quality of services
- To make some recommendations from the overall level of service quality in governments specialized banks.

III. Literature Review

The replication of portion is to carry an insightfulassessment of the past inquest all of it accompanying with theDeterminants of Service Quality Factors, encircled by the researches completed the subsequent study, enclosed by the explores thru the followings.Business dictionary.Com explained service

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quality by followings way "assessment of how well a delivered service conforms to the client's expectations. Service business operators often assess the service quality provided to their customers in order to improve their service, to quickly identify problems, and to better assess client satisfaction.'' [1]. Jain, Gupta & Smrita (2012) "The Reliability and Responsiveness are the most relevant factors for the service quality perception and they have compared the individual scores with the average mean value scored by the private banks." [2]Ashaduzzaman, Moniruzzaman& Sheila (2012),'The organization needs to ensure the right products and services supported by the right promotion and making it available at the right time for the customers. A business that caters to their customers` needs will inevitably gain the loyalty of their customers, thus resulting in repeat business as well as potential referrals. Consequently, it is imperative that businesses get to know their customers. Study revealed Positive and significant relationship has been found between service quality dimensions (reliability, responsiveness, assurance, empathy, and tangibles) and customer satisfaction.'[3]Heryanto (2011), "there is a significant relation between the service quality and the customer satisfaction. And service quality is very important and consists of actions like quick response, commitment, staff availability, right service fat right time, complaint solution, competency and capability of the staff in the bank''[4]Holy Ghost, Fatima and Gnanadhas, Edwin (2011) "The existence of a close bond between the service quality factors and the customer satisfaction level and the impact of the service quality factors on customer satisfaction was varying with the demography of the customers.×[5]Munusamy, Chelliah and HorWaiMun (2010),"The assurance has a positive relationship with customer satisfaction, but without significant effect and the Reliability is the timeliness and accuracy in service provided, reliability does not have much impact on customer satisfaction. Tangibles include the appearance of the company, and the study found that it has high positive correlation with customer satisfaction." [6]

Customer relationship is one alternative facet the banks essential to be given par prominence dealing customer relation resourcefully is a plus that the banks should distillate to win the state of affairs. Aforementioned study mostly overwhelmed services factor and quality issues from different pipelines by this study, it is interpreted determinates of services quality of government specialized banks at the context of Bangladeshi banking mode and customer satisfaction culture practices determinants. From side to side this study it'll be shown the different insightful service quality determinants towards the specialized government bank of Bangladesh.

IV. Methodology

This research is empirically descriptive in nature. The primary data has been collected throughpersonal interview while respondents were conducting banking activity. It has covered theopinion of customers of three government special banks.The information about customer satisfaction in specialized banks of Bangladesh has been obtained through a survey conducted at a sample of population. A total of 75 respondents were taken as sample based on randomly technique. The survey questionnaires were conducted via face to face interviews. Respondents wereasked to respond about their perceptions of the servicesquality provided by government special bank in Bangladesh in terms of the five services qualitydimensions. To record the responses of the sample respondents, a structured questionnaire wasused. Five point *Likert*scaleranking as 1 (strongly disagree), 2(disagree), 3(Neutral), 4(agree) and 5(strongly agree) has been used to pull togetherthe data.

a) *Respondents' Profile:*The customer is vested in in three banks namely BDBL, BKB and RAKUB to the survey. The profiles of customer are described below:

Table 01: Name of Bank

Name of bank	Frequency	Percentage
BDBL	25	33.3%
BKB	25	33.3%
RAKUB	25	33.3%
Total	75	100%

The following table shows that, out of 75 respondents an equal number of 25 respondents (33.3%) from the three banks namelyBDBL, BKB and RAKUB.

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Table 02: Age Group of Customers

Age	Frequency	Percentage
Under 20	3	4%
20 – 30	24	32%
30 – 40	18	24%
40 – 50	17	22.67%
Above 50	13	17.33%
Total	75	100%

According to the table, we can see that most of the respondent's age limit is 20-30 years and the percentage is 32. The second highest percentage is 24 that are between 30-40 years and the 40-50 years is 22.67%, above 50 years' percentage is 17.33 and less than 20 years is 4% respectively.

Table 03: Gender of Customers

Gender	Frequency	Percentage
Male	62	82.67%
Female	13	17.33%
Total	75	100%

From the table of the gender of the respondents, it is asserted 82.67% respondents are male and 17.33% respondents are female. So the majority of the customers are male.

Table 04: Occupation of customers

Particular	Frequency	Percentage
Business man	19	25.33333%
Service holder	13	17.33333%
Housewife	7	9.333333%
Farmer	21	28%
Student	6	8%
Others	9	12%
Total	75	100%

From the above table it can articulate that most of the clients are farmer 21 then businessman 19, service holder 13, others 9, housewife 7and student 6 respectively.

Table 05: Account Types of Respondents

Particular	Frequency	Percentage
Saving Account	32	42.67%
Deposit Account	21	28%
Current Account	16	21.33%
Loan Account	06	8%
Total	75	100%

After investigating the above data, it has found that42.67% customers have a saving account which contains the most percentage. Loan account has the less percentage. Deposit account and current account have 28% and 21.33% respectively.

Table 06: Educational Qualification of Respondents'

Educational qualification	Frequency	Percent
Below SSC	9	12%
SSC	13	17.33%
HSC	19	25.33%
Graduation	14	18.67%
Post-graduation	9	12%
Others	11	14.67%
Total	75	100%

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The table shows that 9 persons are below SSC. the most numbers of customers are HSC conceded which contains the percentage 25.33%. The number and percentage of graduate and Post-graduate are 18.67%, 12% respectively.

Table 07: Main Causes for Choosing Specialized bank

Reasonable Interest	Personal relation with banker	Good or efficient service	Effective service charges	Employees Behavior	Location of the bank	Reputation of the bank	Total
15	4	9	12	7	19	9	75
20%	5.33%	12%	16%	9.33%	25.33%	12%	100%

The above table shows that 25.33% of the clients prefer or choose this bank for Location of the bank. About 16% clients choose forEffective service charges & 9.33% clients choose for employee's behavior, for personal relation with banker 5.33 %. For the reputation of the bank and Good or efficient service clients are both 12% each.

Table 09: Duration of Accounts

Less than 6 Months	6 – 12 Months	1 – 2 Years	3 Years and above	Total
6	14	21	34	75
8%	18.67%	28%	45.33%	100

45.33% or 34 persons are related with the bank about 3 Years and above. 8%, 18.67%, 28% are respectively less than 6 Months, 6 – 12 Months and 1 – 2 Years ancient.

V. Findings and Analysis

Correlation Analysis: The relationship between two or more variables is called correlation.Toknow the strength of the relationship correlation is used.

Let some hypothesis:

1. H_0:There is no relationship between reliability and customer satisfaction.
2. H_0:There is no relationship between responsiveness and customer satisfaction.
3. H_0:There is no relationship between assurance and customer satisfaction.
4. H_0: There is no relationship between empathy and customer satisfaction.
5. H_0:There is no relationship between tangibility and customer satisfaction.

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Correlations

		Customers Satisfaction	Reliability	Responsiveness	Assurance	Empathy	Tangibles
Customers Satisfaction	Pearson Correlation	1	.421**	.330**	.134	.170	.238*
	Significance(2-tailed)		.000	.004	.252	.144	.040
	N	75	75	75	75	75	75
Reliability	Pearson Correlation	.421**	1	.033	.014	-.053	-.118
	Significance(2-tailed)	.000		.781	.902	.654	.314
	N	75	75	75	75	75	75
Responsiveness	Pearson Correlation	.330**	.033	1	-.122	-.217	-.036
	Significance(2-tailed)	.004	.781		.299	.061	.762
	N	75	75	75	75	75	75
Assurance	Pearson Correlation	.134	.014	-.122	1	-.121	-.102
	Significance(2-tailed)	.252	.902	.299		.301	.383
	N	75	75	75	75	75	75
Empathy	Pearson Correlation	.170	-.053	-.217	-.121	1	.006
	Significance(2-tailed)	.144	.654	.061	.301		.956
	N	75	75	75	75	75	75
Tangibles	Pearson Correlation	.238*	-.118	-.036	-.102	.006	1
	Significance(2-tailed)	.040	.314	.762	.383	.956	
	N	75	75	75	75	75	75

***. Correlation at 0.01(2-tailed)*

**. Correlation at 0.05(2-tailed)*

These variable Reliability and Responsivenesshas a significant relationship ($p<.0.01$) with customer satisfaction ($r=.421$) and ($r=.330$) respectively. So these reject the null hypothesis. Therefore, it can be said that there is a weak positive relationship between reliability and customer satisfaction. And there is a weak positive relationship between responsiveness and customer satisfaction statistically significant at 1% level of significant. Tangibles statistically significant at 5% level of significant ($r=.238$, $p<.05$). Assurance and Empathy both have weak positive relationship with customer satisfaction.

The empirical result of the study is presented in the SPSS output below-

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.707[a]	.500	.464	.57438

a. Predictors: (constant) Tangibles, Empathy, Reliability, Assurance, Responsiveness.

In the model summary, multiple $R=.707$, means that relationship between dependent and independent variables is strong positive, $R^2=.500$ This means that explanatory variables are strongly associated to explain the service quality factors of Public Specialized Banks and the adjusted $R^2=.464$, which tells that after taking into account the number of regresses, the model explains 46.4% of the variation in determining the service quality factors of Public Specialized Banks in Bangladesh.

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a) Analysis of variance

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Significance
Regression	22.783	5	4.557	13.812	.000[b]
Residual	22.764	69	.330		
Total	45.547	74			

a. Dependent Variable: Customers Satisfaction

b. Predictors: (constant) Tangibles, Empathy, Reliability, Assurance, Responsiveness.

From the ANOVA table, found that the P-value to obtain F-value (13.812) is almost zero. So overall acceptability of β has been tested by analysis of variance (ANOVA), which also shows the acceptability of the model at the 5% significance level.

b) Multiple Regression Analysis

The multiple regression analysis is a technique of multivariate analysis, adopted to determine the importance of the perceived service quality factors in this research.After analyzing the regression, we can articulate that, if these factor changes then what will be the impact on overall customer satisfaction. When a problem involves three or more variables, it is subjected to multivariate analysis. When the data are on interval scale and one wish to find out the levels of perceived service quality,Given the levels of two or more independent variables, multiple regression analysis would be conducted. Therefore, the models are specified as follows:

$$Y=\alpha+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\beta_5X_5+\varepsilon$$

Where

Y=*customer satisfaction,* X_1= Reliability,X_2= Responsiveness, X_3= Assurance,X_4= Empathy, X_5= Tangibles, ε =*error* .

$\beta_1-\beta_5$= regression coefficient to be estimated.

The coefficient αrepresents the intercept and all $\beta_1-\beta_5$are partial regression coefficients. The least squares criterion estimates the parameter in such a way as to minimize the total errors. Regression output is automatically produced by the SPSS program. After analyzing the multiple regressions output, researchers will identify underlying dimensions, or factors, that explain the correlations among a set of variables.

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Significance
		B	Std. Error	Beta		
1	(Constant)	-3.604	.662		-5.442	.000
	Reliability	.463	.087	.459	5.347	.000
	Responsiveness	.312	.065	.426	4.826	.000
	Assurance	.352	.122	.251	2.878	.005
	Empathy	.391	.109	.316	3.573	.001
	Tangibles	.330	.086	.331	3.833	.000

a. Dependent Variable: Customers Satisfaction

The estimated regression equation is,

$\hat{Y}$= -3.604+.463X1+.312X2+.352X3+.391X4+.330X5

VI. Recommendations and Conclusion

*Recommendations:*Overall, public specialized banks of Bangladesh actively participate in the growth and expansion of the national economy by its services properly. Ifbanks, follow the following recommendation then the dissatisfied customers will be turn into satisfied. After then some of the problems were mostly viewable while measuring clients' satisfaction. Followings are some suggestions for improving service quality. These are:

i. Modern Looking Equipment:The present age is highly competitive and there are many banking institutions around the clients. So they expect more and want to get customized service. But most of the branch of specialized banks was not well decorated like other private and public commercial bank so that lack of modern looking equipment decreases the confidence of customers for further investment.

ii. Reception Desk:The activities of reception desk are fully absent here. From the survey result it is found that most of the customer are disagreed or strongly disagreed on the point of reception desk employees are neat appealing.

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iii. Number of Employee:Compare to the customers, the number of employees is not sufficient. So employees couldn't give quality service to which may affect the reputation of specialized banks of Bangladesh.

iv. Sincerity to Solve the Problem(s):Most of the customers have given their opinion that banks don't sincerely solve their problem and work process is slow. So hasty service is requiring for solve the customers' relevant problem. That's will make the customer satisfaction scenario on the side of banks think so.

v. Online Banking &ATM Booth:Most of the customers giventheir valuable opinion for that. So they should give more concern on start online and ATM booths service and solve these sought of problems as soon as possible.

vi. Increase Professional Efficiency:New employees always have inefficiency in their profession. So bank should arrange sufficient training program for new employees to improve their work knowledge and effectiveness.

vii. Promotional Strategies: A bank takes various types of promotional strategies to introduce its services and to influence clients to take that service. But these banks have no effectiveactivities like this.

viii. Customer Oriented Pricing Strategy: Today's market is highly price sensitive. If clients see they are paying much more than receiving, then level of dissatisfaction increase. So banks should reduce its higher charges & interest rate.

ix. To make all Scheme and Services Available:All the scheme and services are not available in banks which can make the customer satisfied. So banks should make all the scheme & services available like others private bank such as locker service.

VII. Conclusion

As the conducted report points out, there are some problems that surface in the effort of evaluating customers' satisfaction. First, above findings suggest the need and relevance of heavy investment on tangibles particularly computer based banking, Mobile-banking, 'anywhere and anytime banking', etc. Today, customers are exposed to the standards of international banking and expect the same range of service quality from specialized banks of Bangladesh specialized banks of Bangladesh should continually assess and reassess how customers perceive bank services as to know whether the bank meets or exceeds or be below the expectations of their customers. Customer service is complex in nature and dynamic in action. Also, what is 'good service' today may become 'indifferent service' tomorrow and 'bad service' the next day.They are doing quite good but if they want to maintain a strong position among all the commercial banks running in Bangladesh then they requireaccentuating more on uninterrupteddevelopment of the service to gratify their appreciated customers. The banking sector in Bangladesh is undergoing major changes due to competition and the advent of technology. The process of fulfilling customer needs, therefore, requires tailoring bank services that customers want, rather than making them accept whatever banks can conveniently provide. All the leading banks in our country have various extra facilities to offer the customers in comparison with other banks but specialized banks of Bangladeshare mostly so lag behind. The benefits of such surveys represent a clearer picture of the customers' necessity. In this method these banks have the coincidental to consent to a higher customer contentment level and preserve a durablebond with their customer.

References

1. http://www.businessdictionary.com/
2. Jain, Vibhor., Gupta, Sonia., Jain, Smrita. (2012). Customer Perception on Service Quality in Banking Sector: With Special Reference to Indian Private Banks in Moradabad Region. IJRFM,Volume 2, Issue 2, February 2012, ISSN:2231-5985, 597-610.
3. Md. Ashaduzzaman, Md. Moniruzzaman Khan, Sheila Farhana(2012, User Satisfaction Review of Private Commercial Banks in Bangladesh, South Asian Journal of Commerce and Management; ISSN: 0975-8259; Volume 3, Number 2, April-June 2012
4. Heryanto. (2011). Effect of Service Quality on Customer Satisfaction with Bank Nagari,Main Branch Padang. International journal of Business and Management Tomorrow Vol1 no.2, November 2011, ISSN:2249-9962, 1-14.
5. Fatima, S., EdwardGnanadhas, M. (2011). Impact of Service Quality in Commercial Banks on the Customer satisfaction: An Empirical Study. International Journal of Multidisciplinary Research Vol.1 Issue 6, October 2011, ISSN 2231 5780, 19-37.
6. Munusamy, Jayaraman.,Chelliah, Shankar., Mun, HorWai. (2010). Service Quality Delivery and Its Impact on Customer Satisfaction in the Banking Sector in Malaysia. International Journal of Innovation, Management and Technology, Vol 1, No. 4, October 2010, ISSN:2010-0248, 398-404.
7. Edvardsson, B., Larsson, G. and Setterlind, S. (1997), "Internal service quality and thepsychological work environment: an empirical analysis of conceptual interrelatedness",Service Industries Journal, Vol. 17, No. 2, pp. 252-63.
8. Brooks, R.F., Lings, I.N. and Botschen, M.A. (1999), "Internal marketing and customer driven wave

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fronts", Service Industries Journal, Vol. 19, No. 4, pp. 49-67.
9. Lindgreen, A., Palmer, R., Vanhamme, J., Wouters, J. (2006), "A relationship managementassessment tool: Questioning, identifying, and prioritizing critical aspects of customerrelationships", Industrial Marketing Management, vol. 35, Issue 1, pp. 57-71
10. Chaston, I. (1994), "Internal customer management and service gaps within the UKmanufacturing sector", International Journal of Operations and Production, Vol. 14, No. 9,pp. 45-56.
11. Parasuraman, A., Zeithaml, V.A. and Berry, L.L. (1988), "SERVQUAL: A multi-item scalefor measuring consumer perceptions of the service quality", Journal of Retailing, Vol. 64.
12. http://www.businessdictionary.com/definition/service-quality.html
13. https://en.wikipedia.org/wiki/Service_quality
14. https://en.wikipedia.org/wiki/Bangladesh_Bank
15. https://en.wikipedia.org/wiki/Ansar-VDP_Unnayan_Bank
16. https://en.wikipedia.org/wiki/Palli_Sanchay_Bank
17. https://en.wikipedia.org/wiki/Shimanto_Bank
18. https://en.wikipedia.org/wiki/Rajshahi_Krishi_Unnayan_Bank
19. https://en.wikipedia.org/wiki/Bangladesh_Krishi_Bank
20. http://bankinfobd.com/banks/list_of_banks/Commercial
21. http://businessnews24bd.com/category/banking-news/
22. http://www.banknews24.com/

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Employees Empowerment and their Performance in Private Sector: An Analytical Study

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Abstract- The purpose of this paper is to explore the different dimensions of employee empowerment and to determine the impact of employee empowerment tools on performance of private sector employees in Punjab. Structured questionnaire is used to collect the required primary data from 80 respondents in private sector in Punjab. Descriptive statistics, correlation, regression analysis, factor analysis and t-test are used as statistical tools in analysis. The study found that Performances of employees are significantly affected by independent decision making and open communication in the organization. Getting equal rights in organization is the most important factor which improves performance of the private sector employees. The first factor 'communication empowerment 'explained 25.90 percent of the total variance and it comprises five variables namely encouragement of open communication, authority to correct problem, input is solicited in planning changes and job gives sense of accomplishment.

Keywords: empowerment, employee performance, factor analysis, descriptive statistics, rotated component matrix.

GJMBR-A Classification: JEL Code: J54



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Employees Empowerment and their Performance in Private Sector: An Analytical Study

Miss Richa Aryan [α], Dr. Surat Singh [σ] & Dr. Amrinder Singh [ρ]

Abstract- The purpose of this paper is to explore the different dimensions of employee empowerment and to determine the impact of employee empowerment tools on performance of private sector employees in Punjab. Structured questionnaire is used to collect the required primary data from 80 respondents in private sector in Punjab. Descriptive statistics, correlation, regression analysis, factor analysis and t-test are used as statistical tools in analysis. The study found that Performances of employees are significantly affected by independent decision making and open communication in the organization. Getting equal rights in organization is the most important factor which improves performance of the private sector employees. The first factor 'communication empowerment 'explained 25.90 percent of the total variance and it comprises five variables namely encouragement of open communication, authority to correct problem, input is solicited in planning changes and job gives sense of accomplishment. The research offers a more precise way to understand the impact of different factors of empowerment on performance of employees'. Management of private sector organizations can recognize the importance of empowerment to improve the productivity and performance of organization.

Keywords: empowerment, employee performance, factor analysis, descriptive statistics, rotated component matrix.

I. Introduction

Motivated and empowered employees have the capability which can help the organizations to reach at top. A good manager can use empowerment techniques to enhance the quality and quantity of performance of employees. Empowerment arise when independence in decision making, freedom, power and autonomy is given to employees for innovation and creativity. Empowerment can also be used as a motivational tool to make the employees more satisfied in terms of non monetary rewards. Empowerment allows a worker to follow a self directed path towards journey of organizational success. An organization can make the efforts of employees more successful by making their employees innovative in getting new ideas and in rational decision making by giving them power and authority. Employee empowerment is important because of shorter span of time for taking decisions, Employees directly connected to work need to take decisions. In addition to these Satisfaction and performance of employees depends on the authority that has been given to the individual.

Three levels have been used to study empowerment: At initial level encouraging employees to play a more effective role in their work, at next level involving the employees so that ways can be improved in which things can be done and at the highest level enabling the employees to make bigger decisions without referring to seniors. Employee empowerment can be done by Inspiring creativity and innovation, Equal distribution of power, Independence in executing the duties, Giving equal rights in organization, Allowance of independent decision making, Authority to correct problem, Input is solicited in planning changes ,and when organizations encourages feedback. In 21st century of advance technology and where human talent is the key to progress for an organization, employee empowerment is as necessary as any other resource in the organization so that employees can take quick decisions and respond in time to any changes. Organizations that are committed to employee empowerment they are in a position to motivate and retain their employees, even though it's a multifaceted management tool which needs to be nurtured and handled with a lot of care. Employee empowerment is a positive element in an organization. But it depends on the situation & circumstances. Empowering employees develops self confidence & loyalty in them & helps in enhancing customer satisfaction.

II. Significance of the Study

This study examines the impact of Employee empowerment on performance of employee and determines to what extent it is successful in private sector organizations. This paper tries to make the managers and top management realize the importance of Employee empowerment as a means of enhancing performance of employees. This study suggests that companies using the Employee empowerment approach can gain new insights. Employee empowerment can improves performance of

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employees. The study will provide guidance top management in the development of Employees work.

III. Objectives of the Study

The objective of this study is to throw light towards a very vital aspect of Employee management, known as Employee empowerment. The research will analyze the relationship between the Employee empowerment and its effects on employee's performance at private sectors in Punjab. The ultimate objective is to determine the impact of Employee empowerment on performance of employee. The study will reveal the relationship between employee performance and employee empowerment. It explores effect of different dimensions of Employee empowerment on employees.

IV. Review of Literature

Bradley and Benson (1990) explore the forebear, bridging and central role of employee empowerment. Sample of 111 employees in 4 organizations have been collected for research. Their result indicated that actions of external leaders, the responsibilities given to Employees, Personnel policies, and social structure of Employees all worked to enhance employee–empowerment experiences. Their study reveals that empowered Employees were also more productive and proactive than less empowered Employees, and had higher levels of customer service, job satisfaction and Employee commitment.

Pilar, Angel Martinez and Mauela (2005) explores in their research survey of university research and development employees about the mediator role on the relationship between performance of organization and employee empowerment. The results reveal that employee empowerment has positive impact on performance of organization and on its attitudes.. The moderator role indicated that Employee labor flexibility and age diversity decreased the positive affect of Employee empowerment on Organizational performance. Perceived work based social support positively, moderated the impact of Employee empowerment on productivity of employees; on the other hand work-based organizational support moderated its effect on customer service. Finally, perceived fairness and Employee gender's diversity were also positively related to the job satisfaction.

Martin and Hans (2001) explore that importance of Employees work to success of innovative projects. They developed a comprehensive concept of collaboration in Employees, called Employees work quality. Six facets of Employees work quality construct were specified: communication, coordination, balance of member contribution, mutual support, effort, and cohesion. The result reveals that Employees work quality was significantly associated with Organizational performance as rated by Employee members, Employee leaders and Employee external managers. Furthermore, Employees work quality showed strong association with Employee members' personal success.

Meyerson and Dewettinck (2012) in their research on effect of empowerment on employees performance reveals that empowerment and its implementation in organization do impact the performance of employees .They explores that delegation of authority ,reward based on performance and suggestion system have the most powerful impact on performance of employee. Empowerment is the cause of improvement in employee's performance .If employees are allowed to get involved in decision making in choosing a job. They will perform the job with more competence and with more enthusiasm.

Celik et.al (2014) evaluates the effect of employee empowerment applications on organizational creativity and innovativeness in enterprise .They found that there is positive and meaningful relationship of employee empowerment tools and organization creativity and innovativeness. Organization which uses employee empowerment techniques for creativity and open communication, employees of that organization seems to be more productive .Need is to set up a system of empowerment according to the needs of the organization.

V. Research Methodology

The scope of the study will be limited to private sector employees in Punjab. This research will cover the aspects related to the activities related to empowerment in private organizations and different tools that are used by private organizations for empowerment. This study was conducted in private organizations in Punjab region. The data was collected from top level and middle level employees as the target group of the study. This research took a period of two months during which data was collected from the field, organized, analyzed and presented in analytic form. The study employed the use of self structured questionnaire to collect the required primary data. Descriptive statistical analysis technique was employed to obtain useful summary of responses. Simple random sampling is used and total sample population of eighty employees. Simple random sampling was used since no complexities were involved. Simple random sampling is used and total sample population is eighty respondents. Primary data was collected through the use of self-structured questionnaires. The factor analysis technique with rotated method was employed in order to extract the important factors (variables) which have been given in table 1 below. The 21 version of SPSS has been used to analyses the data.

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Table 1

Sr. No	Variables used for factor analysis
1	My organization Inspires creativity and innovation
2	Power is equally distributed in the organization
3	Non-managers have power and authority to execute their duties
4	Employees have independence in executing their duties
5	All should have equal rights in the organization
6	My organization allows for independent decision-making
7	Open communication has been encouraged in my organization
8	Power is centralized in the organization
9	Managers helps to improve confidence in task performance
10	My organization encourages feedback from the employees
11	My manager consults me before making decisions that will affect me
12	This is the type of job in which I can feel a sense of accomplishment
13	I have the authority to correct problems when they occur.
14	The work I do makes a difference here.
15	I feel valued as a team member.
16	My input is solicited in planning changes.
17	Involved in creating vision for future.
18	Highly satisfied with recognition.

The variables (factors) have been extracted on the basis of Eigen values greater than one. From this we designed a questionnaire to solicit employee's views on a five point scale where 1= Strongly agree, 2 = agree, 3 = neutral, 4= disagree, 5 = strongly disagree. After identifying the list of variables, the correlation matrix was designed and the factors have been extracted on the basis of Eigen values by using the Principal component analysis and the rotation method varimax with Kaiser normalization.

VI. Interpretation of the Output

1. *Descriptive Statistics:* The first output from the analysis is a table of descriptive statistics for all the variables under consideration as shown in the following table 2

Table 2: Descriptive Statistics

	Mean	Std. Deviation	Analysis N
organization inspires creativity and innovation	1.86	.807	80
equal distribution of power	2.66	1.006	80
powers of non managers to execute their duties	2.79	.924	80
independence in executing their duties	2.56	.939	80
equal rights in organization	2.20	.802	80
allowance of independence decision making	2.64	1.022	80
encouragement of open communication	2.46	1.030	80
power is centralized	2.20	.906	80
managers help to improve confidence	2.21	1.052	80
organization encourages feedback	2.33	.952	80
managers consults the employees	2.74	.896	80
job gives sense of accomplishment	2.66	1.018	80
authority to correct problem	2.53	.968	80
employees work make difference	2.44	.966	80
feel valued as a team member	2.25	.907	80
input is solicited in planning changes	2.58	.839	80
involved in creating vision for future	2.44	.953	80
highly satisfied with recognition	2.48	1.031	80

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As is obvious from the above table, the mean, standard deviation and number of respondents(N) who participated in the survey are given .From an analytical look on the mean column of the table ,one can conclude that the variable 'powers of non managers to execute their duties ' is the most important variable that influences the performance of employees. It has the highest mean of 2.79.

2. *Correlation Matrix:* The next output from the analysis is the correlation coefficient matrix. The principal diagonal of the correlation matrix contains 1s, because the correlation coefficient between a variable and itself is always one .The correlation coefficients above and below the principal diagonal are the same. The value of the determinant of the correlation coefficient matrix is given at the foot of the table below. The value of the determinant should be at least 0.00001 for carrying the factor analysis. The value of the determinant in our study being 0.003 allows us to carry with factor analysis .The value of the determinant (0.178) being greater than necessary value (0.00001) shows that multi co linearity is not a problem for the present dataset. Furthermore by applying 1\3 rule, it can be concluded that there is positive correlation among the variables. In other words, if at least 33 percent of the correlation coefficients are positive, we say that the correlation among the variables is positive .This condition has also been used in our study as shown in the following table 3
3. *Kaiser meyer olkin (KMO) and Bartlett's Test:* The KMO measures the sampling adequacy the value of which should be greater than 0.5 for a satisfactory factor analysis to Proceed. In our study, this value is 0.687, which is approximately equal to 0.7 that also allows us to proceed for factor analysis.

Bartlett's test is another measure of the strength of the relationship among variables. This tests the null hypothesis that the correlation matrix is an identity matrix. We would like to reject this null hypothesis, because for factor analysis to work, we need some relationship between variables and if the R matrix were an identity matrix then all correlation coefficients would be zero. Therefore, we want this tests to be significant (i.e have a significance value less than 0.05).From the same table given below, we can see that the Bartlett's test of Sphericity is significant. That is, its associated probability is less than 0.05.In fact it is actually .000 in the present study, i.e. the significance level is enough to reject the null hypothesis .Therefore, we reject the null hypothesis of identity matrix. The results are shown in following Table 5.

Table 4: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.687
Bartlett's Test of Sphericity	Approx. Chi-Square	426.320
	Df	153
	Sig.	.000

As is obvious from the above table, Bartlett's test is highly significant (P<0.001), and therefore, factor analysis is appropriate.

4. *Communalities:* The next item from the output is a table of communalities which shows how much of the variance in the variables has been accounted for by the extracted variables (factors). For instance about 73 percent of the variance in the variable, organization inspires creativity and innovations is accounted for by the extracted factors, while 75 percent of the variance in the variable ,the power is centralized is accounted for by the extracted factors and so on, as shown in the table -5 given below.

Table 5: Communalities

	Initial	Extraction
organization inspires creativity and innovation	1.000	.731
equal distribution of power	1.000	.665
powers of non managers to execute their duties	1.000	.639
independence in executing their duties	1.000	.607
equal rights in organization	1.000	.622
allowance of independence decision making	1.000	.667
encouragement of open communication	1.000	.701
power is centralized	1.000	.759
managers help to improve confidence	1.000	.572
organization encourages feedback	1.000	.446
managers consults the employees	1.000	.706
job gives sense of accomplishment	1.000	.727

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authority to correct problem	1.000	.655
employees work make difference	1.000	.709
feel valued as a team member	1.000	.680
input is solicited in planning changes	1.000	.530
involved in creating vision for future	1.000	.665
highly satisfied with recognition	1.000	.617

Extraction Method: Principal Component Analysis.

5. *Total variance Explained:* SPSS output 5 lists the Eigen values associated with each linear component (factor) before extraction, after extraction and after rotation. Before extraction SPSS has identified 18 linear components within the data set. We know that there would be as many eigen values as there are variables .The eigen values associated with each factor represent the variance explained by that particular component and SPSS also displays the Eigen values in terms of the percentage of variance explained .The first few factors explain relatively large amount of variance whereas subsequent factors explain only small amount of variance. SPSS then extracts all factors with Eigen values greater than 1, which leaves us with six factors .The Eigen values associated with these factors are again displayed in the columns labeled extraction sums of squared loadings. Eigen values of the factors after rotation are displayed. Before rotation ,factor 1 accounted for considerably more variance than the remaining five (25.9%, compared to 10.72 %, 8.59%, 7.52%, 6.26%, 5.96%), However, after extraction, it accounts for 14.89% of variance compared to 11.73%, 11.64%, 10.50%, 9.37% and 6.82% respectively). Thus it is obvious from the table 6 given below that about 64.98 percent of the total variance has been explained by the factors and all the remaining factors are not significant.

Table 6: Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.664	25.908	25.908	4.664	25.908	25.908	2.681	14.897	14.897
2	1.930	10.723	36.632	1.930	10.723	36.632	2.112	11.735	26.632
3	1.547	8.594	45.226	1.547	8.594	45.226	2.096	11.642	38.274
4	1.355	7.527	52.754	1.355	7.527	52.754	1.891	10.508	48.782
5	1.128	6.268	59.021	1.128	6.268	59.021	1.688	9.378	58.161
6	1.074	5.967	64.988	1.074	5.967	64.988	1.229	6.828	64.988
7	.920	5.112	70.100						
8	.805	4.475	74.575						
9	.769	4.270	78.845						
10	.689	3.825	82.670						
11	.653	3.628	86.298						
12	.489	2.719	89.017						
13	.474	2.632	91.650						
14	.435	2.416	94.066						
15	.362	2.013	96.079						
16	.270	1.498	97.577						
17	.239	1.328	98.905						
18	.197	1.095	100.000						

Extraction Method: Principal Component Analysis.

6. *Rotated component (factor) matrix:* There are several things to consider about format of this matrix. First, factor loadings less than 0.5 have not been displayed because we asked for these loadings to be suppressed. Second, the variables have not been listed in the order of size of their factor loadings because we have not asked for the output to be sorted by size.

The idea of rotation is to reduce the number of factors on which the variables under investigation have high loadings as shown in Table 7

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Table 7: Rotated Component Matrix[a]

	Component					
	1	2	3	4	5	6
encouragement of open communication	.793					
authority to correct problem	.749					
input is solicited in planning changes	.636					
job gives sense of accomplishment	.506					
managers consults the employess		.787				
powers of non managers to execute their duties		.726				
allowance of independence decision making		.542				
organization encourages feedback						
equal rights in organization			.762			
highly satisfied with recognition	.517		.570			
feel valued as a team member			.503			
involved in creating vision for future						
organization inspires creativity and innovation				.814		
equal distribution of power				.695		
employees work make difference					.831	
independence in executing their duties					.533	
managers help to improve confidence					.510	
power is centralized						.858

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.[a]

Using the factor loadings, the empowerment attributes were grouped into their respective factors and were named according to their collective representation. The main findings of the study have been summarized as follows:

Factor 1

First factor consist of five variables, namely encouragement of open communication, authority to correct problem, input is solicited in planning changes, and job gives sense of accomplishment. The total variance explained by factor 1 is 25.90 percent. This is named as 'communication empowerment'.

Factor 2

This factor includes three variables namely the managers consults the employees, powers of non managers to execute their duties, allowance of independence decision making. The total variance explained by factor 2 is 10.72 percent .This is called as 'consultation empowerment'.

Factor 3

This factor comprises three variables namely equal rights in organization, highly satisfied with recognition, feel valued as a team member. This factor is termed as 'motivational empowerment' which explains 8.59 percent of the total variance.

Factor 4

This factor includes two variables namely organization inspires creativity and innovation, equal distribution of power. This factor is named as 'co - determination empowerment' which explains 7.52 percent of total variance.

Factor 5

This factor consist three variables namely employees work make difference, independence in executing their duties, managers help to improve confidence. This factor is named as 'autonomy empowerment' which explains 6.26percent of total variance.

Factor 6

This factor consist one variable namely power is centralized. This factor is named as' control empowerment', which explains 5.96 percent of total variance.

VII. Conclusion

The study made an attempt to identify the factors affecting the empowerment of private sector employees in the Punjab state by analyzing the sample of 80 employees who have been interviewed personally through a structured questionnaire. The 21st version of SPSS has been used for analysis purposes. The factor analysis technique has been used and the factor analysis using principal component extraction method with varimax rotation has extracted six factors which explained 64.98 percent of the total variance. All the six factors 'communication empowerment', consultation empowerment', motivational empowerment', 'co-determination empowerment', 'autonomy empowerment', 'control empowerment' represents different empowerment attributes important to employees. The first factor 'communication empowerment 'explained 25.90 percent of the total variance and it comprises five variables namely encouragement of open

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communication, authority to correct problem, input is solicited in planning changes, and job gives sense of accomplishment. The second factor 'consultation empowerment' explains 10.72 percent of the total variance and it includes three variables namely the managers consults the employees, powers of non managers to execute their duties, allowance of independence decision making. The third factor 'motivational empowerment' comprises three variables namely equal rights in organization, highly satisfied with recognition, feel valued as a team member and it explained 8.59 percent of the total variance. The fourth factor 'co determination empowerment includes two variables namely organization inspires creativity and innovation, equal distribution of power and explained 7.52 percent of the total variance .The fifth factor 'autonomy empowerment' explained 6.26 percent of the total variance and it also includes three variables namely employees work make difference, independence in executing their duties, managers help to improve confidence. The sixth factor explained 5.96 percent of the total variance and it includes one variable namely power is centralized. The variable, Power of non managers to execute their duties having the highest mean 2.79 is most important to employees as concerned to empowerment followed by the variables, managers consult the employees and equal distribution of power, job gives sense of accomplishment and allowance of independent decision making.

References Références Referencias

1. A Theoretical Concept and Empirical Organization Science, Vol.12, No. 4, 435449 (Carnicer, Sanchez, Perez, & Jimenez, 2005) (Briône & Nicholson, 2012) (Celik & Celik, 2014) (Demġrcġ & Erbaġ, 2010) (Ganjinia, Gilaninia, Poorali, & Sharami, 2013) (Mehrabani & Shajari, 2013) (Meyerson & Dewettinck, 2012)(Nadu, 2015)
2. Briône, P., & Nicholson, C. (2012). Employee empowerment : (January).
3. Bradley, L. And Kirkman, B.R. 1999, Beyond Self-Management: Antecedent and consequences of Employee Empowerment, in: The Academy of Management Journal, Vol. 42, No. L, 58-74.
4. Carnicer, P. D. L., Sanchez, A. M., Perez, M., & Jimenez, M. J. V. (2005). Team empowerment: an empirical study in Spanish University R & amp; D teams. International Journal of Human Resources Development and Management, 5(1), 69. Http://doi.org/10.1504/IJHRDM.2005.005986
5. Celik, A., & Celik, N. (2014). The Effects of Employee Empowerment Applications on Organizational Creativity and Innovative-Ness in Enterpriseses : The Case of OIZ Adnan Celik, phd, 10(10), 99–107.
6. Demġrcġ, M. K., & Erbaġ, A. (2010). Employee Empowerment and Its Effect on Organizational Performance, 142–146.
7. Ganjinia, H., Gilaninia, S., Poorali, R., & Sharami, M. (2013). OVERVIEW OF EMPLOYEES EMPOWERMENT IN, 3(2), 38–43.
8. Mehrabani, S. E., & Shajari, M. (2013). Relationship between Employee Empowerment and Employee Effectiveness, 2(4).
9. Meyerson, G., & Dewettinck, B. (2012). Effect of Empowerment on Employees Performance Abstract : 2(July), 40–46.
10. Martin, H. And Hans, G.G. 2001 Employee Work Quality and Success of Innovative Projects, in:
11. Nadu, T. (2015). Impact of Employee Empowerment on Organisational performance Case of Automobile Industry in Chennai city of Tamil Nadu in India., 2(4), 20–31.
12. Pilar, D., Angel, M., Manuela, P., & Maria, J. (2005). Team Empowerment: An Empirical Study in Spanish University R & D Teams". International Journal of Human Resources Development and Management. 5 (1), 69-84

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References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

INDEX

A

Antecedents · 3, 4, 30

C

Cohesive · 7

E

Erudite · 43
Ethihad · 28

I

Isotonicity · 25

M

Meritoriously · 43
Munificent · 3

T

Tencent · 40





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